hydrochlorothiazide. Using the ACCOMPLISH results for valsartan/amlodipine, it is likely to have reasonably low costs per event avoided for the treatment of high risk patients with hypertension in Sweden.

PCV74

ONE-YEAR COST-EFFECTIVENESS OF CYTOCHROME P450 2C19 GENOTYPE-GUIDED ANTIPLATELET THERAPY IN PATIENTS WITH ACUTE CORONARY SYNDROMES IN THE UNITED KINGDOM

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OBJECTIVES: Cytochrome P450 2C19 (CYP2C19) genotype has been shown to affect cardiovascular (CV) outcomes for clopidogrel but not prasugrel. This study evaluates the incremental cost-effectiveness ratio (ICER) of CYP2C19-guided vs. routine antiplatelet therapy in acute coronary syndrome (ACS) patients in the UK. **METHODS:** We constructed a literature-based, decision analytic, Markov model to estimate the annual cost-effectiveness of CYP2C19-guided aspirin plus either clopidogrel or prasugrel therapy vs. no genotyping. Post-initial ACS CV events were based on the TRITON-TIMI 38 study and genetic substudy. Cost data sources were: National Health Service (NHS) reference cost for 2008–09—nonfatal MI and stroke, CV death, intracranial hemorrhage, other life-threatening bleed, and minor bleed; Drug Tariff 2009—drugs; www.genetic-health.co.uk/—CYP2C19 genotyping; or US-based reference pricing converted to £ using appropriate exchange rates -monthly CV disease maintenance cost. Disease-state utilities were obtained from published sources. The model allowed for clopidogrel/prasugrel discontinuation and aspirin monotherapy. Model sensitivity was assessed using 1-way analysis of parameters varied by quartile or at least +/– 25%. **RESULTS:** The analysis demonstrated an increase in incremental cost (£81); greater incremental QALY (0.05); and an ICER £1529/QALY for CYP2C19 genotype-guided therapy over 12 months. The model was most sensitive to monthly CV care cost, NFMI cost, proportion of patients on clopidogrel, and life-threatening bleeding cost. The model was least sensitive to the cost of clopidogrel, prasugrel, or CYP2C19 genotyping. **CONCLUSIONS:** The model-based ICER of £1,529/QALY for the CYP2C19 testing strategy is significantly less than the UK threshold of £20,000 that is considered good value. CYP2C19 genotype-guided clopidogrel or prasugrel therapy is cost-effective for up to 1 year in ACS patients in the UK.

PCV75

CANADIAN COST-EFFECTIVENESS ANALYSIS OF DRONEDARONE VERSUS OTHER ANTI-ARRHYTMIC DRUGS IN PATIENTS WITH PAROXYSMAL AND PERSISTENT ATRIAL FIBRILLATION

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OBJECTIVES: Dronedarone is a novel anti-arrhythmic drug (AAD) that, unlike other AADs, was shown to reduce cardiovascular hospitalizations or death in the ATHENA clinical trial. In addition, dronedarone reduces AF recurrence, maintains rate control, and has a favorable safety profile with low pro-arrhythmic and organ-toxicity profile. The objective of this study was to construct a health economic model to assess the cost-effectiveness of dronedarone vs. other AADs in a Canadian setting. **METHODS:** A state transition model evaluated through patient-level simulation has been developed using Microsoft Excel. It allows comparisons over varying time horizons and treatment durations, and consists of health states for: treatment, off treatment, symptomatic AF recurrences, stroke, acute coronary syndromes, coronary heart failure and death. Transition probabilities were derived from the patient level data from the ATHENA trial, and relative risks between dronedarone and three commonly used comparators (amiodarone, sotalol and flecainide) identified by clinical experts were derived from a mixed treatment comparison (systematic review) of published clinical trials published between 1980 and 2009. Patients discontinuing treatments were assumed to progress according to the rates in the standard of care arm of ATHENA. Costs of monitoring and initiation were taken into account. Costs were applied to each adverse event (AE) observed (Canadian Costs [C$] 2007). Effectiveness was expressed as QALYs, using preference based utility weights for health states based on published data. Discounting was 5% and a lifetime horizon was taken. **RESULTS:** The model predicts higher quality adjusted survival for patients on dronedarone: between 1.13 and 2.01 QALYs depending on comparator. In Canada, the resulting ICERs (per QALY) are C$5600 compared to amiodarone, C$5300 compared to flecainide, and C$5300 compared to sotalol. Results were sensitive to differences in risk of mortality between treatment groups. **CONCLUSIONS:** Dronedarone represents a cost-effective treatment for patients with atrial fibrillation in Canada.

PCV76

COST-EFFECTIVENESS ANALYSIS OF DRONEDARONE IN PATIENTS WITH ATRIAL FIBRILLATION IN MEXICO: A WITHIN TRIAL ANALYSIS BASED ON ATHENA TRIAL

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OBJECTIVES: To perform a cost-effectiveness analysis (CEA) for the use of dronedarone in patients with atrial fibrillation (AF) in order to prevent hospitalizations due to cardiovascular events or death (HCED), from the public health care system perspective in Mexico. **METHODS:** A CEA was made based on the clinical information from the multicenter, randomized, clinical study ATHENA, where dronedarone was compared to placebo on top of standard treatment in patients with AF. Overall, 2301 patients were randomized to dronedarone, and 2327 to placebo. The primary clinical endpoint was HCED. Only direct medical health care costs were calculated. The health resource utilization was elicited from the ATHENA trial. The unit costs of each event were obtained from the medical literature and/or validated by local experts, whenever information was not available. Most of the cost information is based on IMSS (Social Security) figures, and updated to year 2009 (1€ = MX$17.05). a discount rate of 5% was used. An incremental cost-effectiveness analysis was performed complemented by a deterministic sensitivity analysis (DSA) to assess robustness of the model. **RESULTS:** Patients randomized to dronedarone experienced 1190 events of HCED (average rate 0.51 [CI 95%: 0.47–0.55]) while patients in the placebo group had 1601 (average rate 0.69 [CI 95%: 0.64–0.74]), or –415 events, 18% less hospitalizations (CI 95%: 12–25%) for the dronedarone group. The average cost per patient in the dronedarone group was €3028 as compared to the placebo group of €2,941, yielding a cost difference of €87.4, and an avoided incremental cost per HCED of €477.00 of dronedarone vs. the placebo group. The DSA shows the analysis is robust. **CONCLUSIONS:** According to the ATHENA trial, dronedarone is a cost-effective treatment option for the reduction of HCED from the Mexican perspective. Dronedarone's value could be enhanced if indirect costs averted from the decreased rates of HCED included.

PCV77

A SIMULATION MODEL TO ASSESS COST-EFFECTIVENESS OF STATINS IN HIGH RISK PATIENTS WITH ELEVATED LDL-C IN SPAIN

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OBJECTIVES: The aim of this study is to estimate cost-effectiveness of lowering low-density lipoprotein cholesterol (LDL-C) with statin monotherapy in patients with elevated LDL-C with two or more cardiovascular risk factors or either coronary heart disease (CHD) in Spain. **METHODS:** A Markov model was developed to represent the transition of a cohort of patients with elevated LDL-C or with CHD at risk of a cardiovascular event (CVE) through four health states: patients with LDL-C, CVE, death by CVE and death by other causes. Probabilities of a CVE in females and males were determined, based on CHD risks estimated trough locally-adjusted Framingham risk equations using data from the DORICA and PRIMULA study. LDL-C lowering efficacy of statins, mortality, and health-state utilities were obtained from published scientific literature. Cardiovascular risk factors included were age, systolic blood pressure, diabetes, smoking and high-density lipoprotein cholesterol (HDL-C). Treatment and CVE direct medical costs were obtained from a medication database and DRGs for public hospitals in 2009 in Spain. Deterministic results were estimated and a probabilistic sensitivity analysis was conducted. Results were expressed as expected cost per quality adjusted life-years (QALYs) gained. **RESULTS:** In deterministic analyses, expected costs per patient per year at age of 40 were higher for patients with 2 or more cardiovascular risk factors who were not treated than those who were treated (female: €41,300 vs. €40,106; male: €22,160 vs. €18,333). Effectiveness was higher for treated patients in both genders (female: 0.17 QALY; male: 0.37 QALY). Similar results were found for patients with CHD (female: €35,706 vs. €34,664, 0.10 QALY; male: €16,892 vs. €16,073, 0.12 QALY). **CONCLUSIONS:** From the perspective of the Spanish health care system, treatment with statin monotherapy is considered to be cost-effective versus no treatment in female and male patients with 2 or more risk factors or CHD.

PCV78

COST-EFFECTIVENESS ANALYSIS OF IVABRADINE IN CHRONIC STABLE ANGINA PATIENTS IN AN AUSTRIAN SETTING

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OBJECTIVES: High resting heart rate (HR) has been progressively accepted as a modifiable cardiovascular risk factor. Ivabradine (ProcoralanÒ) is a specific HR lowering agent. This study aimed estimating the cost-effectiveness of ivabradine in stable angina patients with a normal sinus rhythm and a resting HR above 70 beats per minute (bpm) from the Austrian health care perspective: 1) versus generic diltiazem when beta-blockers (BB) are contra-indicated or non tolerated; and 2) in combination with generic atenolol versus generic atenolol alone. **METHODS:** A Markov chain Monte Carlo stochastic simulation model was used to estimate the influence of HR lowering in cardiovascular morbidity and mortality and its economic consequences. Treatments considered are ivabradine, 7.5 mg twice a day, diltiazem, 240 mg once a day and atenolol 50 mg once a day. HR distribution, survival and time to hospitalization were modelled as weibull functions. Events considered were acute myocardial infarction, stroke, heart failure, death and revascularization procedures. Only direct medical costs were included. Effectiveness was measured in quality-adjusted life-years (QALYs). Time horizon was set at 20 years and discount rates for costs and effectiveness were 3%/year. **RESULTS:** The between-group difference in HR reduction was –6.4 bpm and –8.8 bpm in favour of ivabradine strategy in targeted patient populations 1) and 2) respectively. Incremental ivabradine strategy cost was €6789 versus generic diltiazem and €6749 versus generic atenolol. Incremental QALYs were 1.067 and 1.076 respectively. Incremental cost-effectiveness ratios for ivabradine strategy were €5800/QALY and €6273/QALY. Deterministic sensitivity analyses showed that

ivabradine strategy is cost-effective in both approaches in all cases at a willingness to pay threshold of €22,000/QALY. **CONCLUSIONS:** In an Austrian setting, ivabradine is a cost-effective treatment in stable angina patients with resting HR > 70 bpm.

PCV79

COST-EFFECTIVENESS OF DRONEDARONE IN SOUTH KOREA

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OBJECTIVES: Atrial fibrillation (AF) contributes for stroke, sudden death, heart failure, markedly reduced exercise capacity and degraded quality of life. Therefore, an effective treatment of AF is expected to reduce cardiovascular (CV) events and their costs. In 2010, dronedarone has been approved by Korean FDA for risk reduction of CV hospitalization in patients who are in sinus rhythm or who will be cardioverted with relevant conditions. The purpose of this study is to evaluate the cost-effectiveness of dronedarone compared with amiodarone in Korea. **METHODS:** We used the Markov simulation model for AF patients consisting with health states for AF treatment, off-AF treatment, symptomatic AF recurrences, stroke, acute coronary syndromes, congestive heart failure and death. Transitional probability was obtained from ATHENA trial and published literatures. Patient baseline, drug cost, initiation and monitoring cost of AF treatment, disease state cost and adverse event cost were obtained from national insurance claim database. The effectiveness of amiodarone vs. dronedarone was drawn from results of mixed treatment comparison. Discount rate for cost and effectiveness were applied as 5%. From the societal perspectives, we evaluated cost for life-year gained (LYG) and quality adjusted life-years (QALYs) until patients become 100 years old. Subgroup analysis and sensitivity analysis was performed to deal with uncertainty. **RESULTS:** In the base-case analysis, the incremental cost-effectiveness ratio (ICER) of dronedarone versus Amiodarone was approximately €2344/LYG (KRW 3.75 million, 1 Euro = 1600 KRW). Results were robust across subgroups. The ranges of ICER in the sensitivity analysis were from around €1875 ~ €3750/LYG (KRW 3 to 6 million/LYG). Fifty percent of simulations in probabilistic sensitivity analysis fall below a willingness-to-pay of about €3750 per QALYs (KRW 6 million per QALYs). **CONCLUSIONS:** These results showed that dronedarone is to be cost-effective vs. amiodarone for AF patients in Korea.

PCV80

THE COST-EFFECTIVENESS OF AMLODIPINE BESYLATE VERSUS PLACEBO FOR THE PREVENTION OF CARDIOVASCULAR DISEASE IN KOREA

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OBJECTIVES: Antihypertensive therapy is a well-established approach to reducing the risk of cardiovascular disease (CVD). Amlodipine besylate, a calcium channel blocker, has been shown to be an effective antihypertensive agent. The objective of this study was to evaluate the cost-effectiveness of antihypertensive therapy with amlodipine besylate for the prevention of CVD in Korea from a health care perspective over a lifetime. **METHODS:** To estimate long-term cost and effects, a Markov model consisting of nine health states was constructed: Healthy with hypertension, Angina, Myocardial Infarction (MI), Post-MI, Stroke, Post-stroke, CHD death, CVD death, non-CVD cause death. One health state to another can occur with a certain probability at yearly intervals. The incidence of CVD was obtained from published local sources, whereas the risk reductions associated with antihypertensive therapy were taken from the medical literature, selected studies randomly assigned amlodipine besylate or placebo and followed up for at least 1 year. Utility values for CVD and costs of amlodipine besylate were drawn from published literature based on 2005 Korea National Health and Nutritional Examination Survey (KNHANES) data, and Korean pharmaceutical pricing lists, respectively. Costs for CVD were found in published cost-of-illness studies based on local hospital charge data. Patient outcomes were modeled for 45 years, and incremental cost-effectiveness ratios were calculated for amlodipine besylate compared with placebo. **RESULTS:** For a 55-year-old patient with hypertension, the incremental cost of amlodipine besylate compared with placebo was 3,213,660 Korean won (KW) per patient, although the incremental effectiveness of amlodipine besylate was 0.210 quality-adjusted life-years (QALYs) gained per patient. Therefore, the incremental cost-effectiveness ratios associated with amlodipine besylate were 15,288,941 KW/QALY, compared to no treatment. Sensitivity analyses indicated these results to be robust. **CONCLUSIONS:** The results from the model indicate that amlodipine besylate provides a cost-effective antihypertensive treatment strategy for the prevention of CVD in Korea.

PCV81

THE COMPARATIVE ANALYSIS OF THE EFFECTIVENESS AND THE COSTS OF USING THE LOW-MOLECULAR-WEIGHT HEPARINS AND THE ORAL ANTICOAGULANTS FOR THE TREATMENT OF THE VENOUS THROMBOEMBOLISM IN POLAND

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OBJECTIVES: The currently recommended standard treatment of the venous thromboembolism (VTE) are the oral anticoagulants (OA) in the majority of patients and the low-molecular-weight heparins (LMWH) in the selected subpopulations. The titration of the OA doses is difficult and often ineffective. The goal of this research was to compare the OA and the LMWH in the VTE treatment in terms of effectiveness, safety and cost-effectiveness. **METHODS:** The systematic review of the scientific literature comparing the VTE treatment with OA and LMWH was performed. Among others, the resources of the Cochrane Library, the MEDLINE, the Embase and the Biomed Central were searched. The metaanalysis of the reported treatment outcomes was performed using the RevMan5® software. The cost analysis and the cost-effectiveness analysis were performed. The data on the costs of treatment of the VTE in Poland were collected through the retrospective review of patient records obtained from the three hospitals and the anticoagulation clinic in the Krakow area, the pharmaceutical reimbursement databases and the public payer's charge tariffs for the medical services. The modeling (decision tree) was performed using the TreeAge-Pro2009® software. **RESULTS:** The most important differences between the OA and the LMWH were related to the better prevention of the VTE incidence and the better prevention of the small bleedings. With respect to none of the assessed outcomes the OA were better than the LMWH. Within a six month treatment period the Incremental Cost-Effectiveness Ratio of avoiding the complication incidents was 49,865 zlotys (€12,242) from the payer perspective and 3,609 zlotys (€887) from the patient perspective. **CONCLUSIONS:** The LMWH offer the better effectiveness and safety than the OA but their cost-effectiveness is still limited by the relatively high prices of the LMWH.

PCV82

COMMUNICATING COST-EFFECTIVENSS RATIOS TO DECISION MAKERS—THE CASE OF SWEDISH NATIONAL GUIDELINES FOR HEART DISEASES

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OBJECTIVES: Despite the continuing interest in health economic research, we could find no comprehensive and accessible data set on costs and effects, useful as practical information for decision makers who must allocate scarce resources within the cardiovascular field. The objective of this study was to present the cost-effectiveness league table, used in the Swedish national guidelines for heart disease and highlight issues of importance when communicating and interpreting cost-effectiveness evidence to decision makers. **METHODS:** A unique systematic literature search for the treatment of heart diseases was conducted. We then compiled all available cost-effectiveness ratios for different heart conditions and treatment strategies, in a so called league table. All cost-effectiveness results were expressed as a cost per quality adjusted life-years (QALY) or life-year gained. The league table was broken down to illustrate how health economic results may be communicated and made accessible to decision makers. We have highlighted methodological issues when interpreting cost-effectiveness league tables by using implantable cardioverter defibrillators (ICDs) as an example. **RESULTS:** More than 200 cost-effectiveness ratios were found and compiled in the league table ranging from dominant to €950,000 per QALY. Using ICD as an example we identified various problems when interpreting league table results. The results are context specific, time dependant, comparator dependent, often based on point-estimates giving a false sense of precision. **CONCLUSIONS:** League tables provide a means of presenting cost-effectiveness evidence aiding decision makers with valid information within a limited space. We have given examples and presented ways of communicating cost-effectiveness results for e.g. target groups, focusing on how information included in a cost-effectiveness league table may be interpreted and conveyed and used as a tool in the decision-making process.

PCV83

PILOTING THE DEVELOPMENT OF A COST-EFFECTIVE EVIDENCE-INFORMED CLINICAL PATHWAY: MANAGING HYPERTENSION IN JORDANIAN PRIMARY CARE

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OBJECTIVES: The UK's National Institute for Health and Clinical Excellence (NICE) and the Jordan office of the Medicines Transparency Alliance embarked on a pilot project to design an evidence-based guideline for cost-effective pharmacological treatment of essential hypertension in Jordan. The project's objectives were to directly address a major health problem for Jordan by producing a guideline; and to delineate the strengths and weaknesses of Jordan's health care process to allow similar future efforts to be planned more efficiently. **METHODS:** The pilot spanned a period of approximately 8 months. Activities were overseen by local technical and guideline development teams, as well as experts from NICE. NICE's hypertension guidelines and economic model were used as a starting point. Parameters in the economic model were adjusted according to input and feedback from local experts with regards to Jordanian physician and patient practices, resource costs, and quality of life estimates. The results of the economic model were integrated with the updated available clinical trial literature. **RESULTS:** The outputs of the economic model were used to inform recommendations, in the form of a clinical algorithm. a report of the process and the strengths and weaknesses observed was developed, and recommendations for improvements made. **CONCLUSIONS:** The pilot represented the start of what is intended to be a health care process change for the country of Jordan. Issues emerged which can inform strategies to ensure a more cohesive and comprehensive health care approach